



Office of Research and Development

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**Press
Release**

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EPA Research Suggests Synthetic Hormone Used in Livestock May Affect Fish

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Studies at the U.S. Environmental Protection Agency have shown that B- trenbolone, a growth hormone used in livestock decreases reproductive capacity of the fathead minnow at very low concentrations in the water (27 parts-per-trillion). Trenbolone also disrupts endocrine function and causes females to develop secondary sex characteristics similar to those seen in male fish. This masculinization is similar to the types of effects seen in women exposed to anabolic androgen steroids to enhance athletic performance.

The research indicates that B- trenbolone, a breakdown product of trenbolone acetate, widely used in beef production in the United States, may exert adverse impacts on fish populations from inadvertent release of runoff from feedlots into aquatic systems. The fathead minnow is commonly used as a model species for aquatic toxicity testing.

“The marked sensitivity of the fish to the reproductive effects of trenbolone suggest that studies monitoring the occurrence and persistence of this chemical in aquatic environments are needed to assess potential risk,” says Dr. Gary Ankley, EPA Research Toxicologist who is the lead author of a study published in the June 2003 issue of *Environmental Toxicology and Chemistry*, a journal of the Society of Environmental Toxicology and Chemistry (SETAC).

This is the first published study demonstrating evidence of reproductive toxicity and endocrine system impacts of trenbolone in fish exposed to relatively small concentrations of the synthetic steroid in water. Recent studies have shown that trenbolone excreted from treated livestock is relatively persistent in the environment, however little is known about effects on aquatic organisms. Research continues at EPA to better identify the degree to which trenbolone occurs in runoff from cattle operations and to determine what its effects may be on fish.

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